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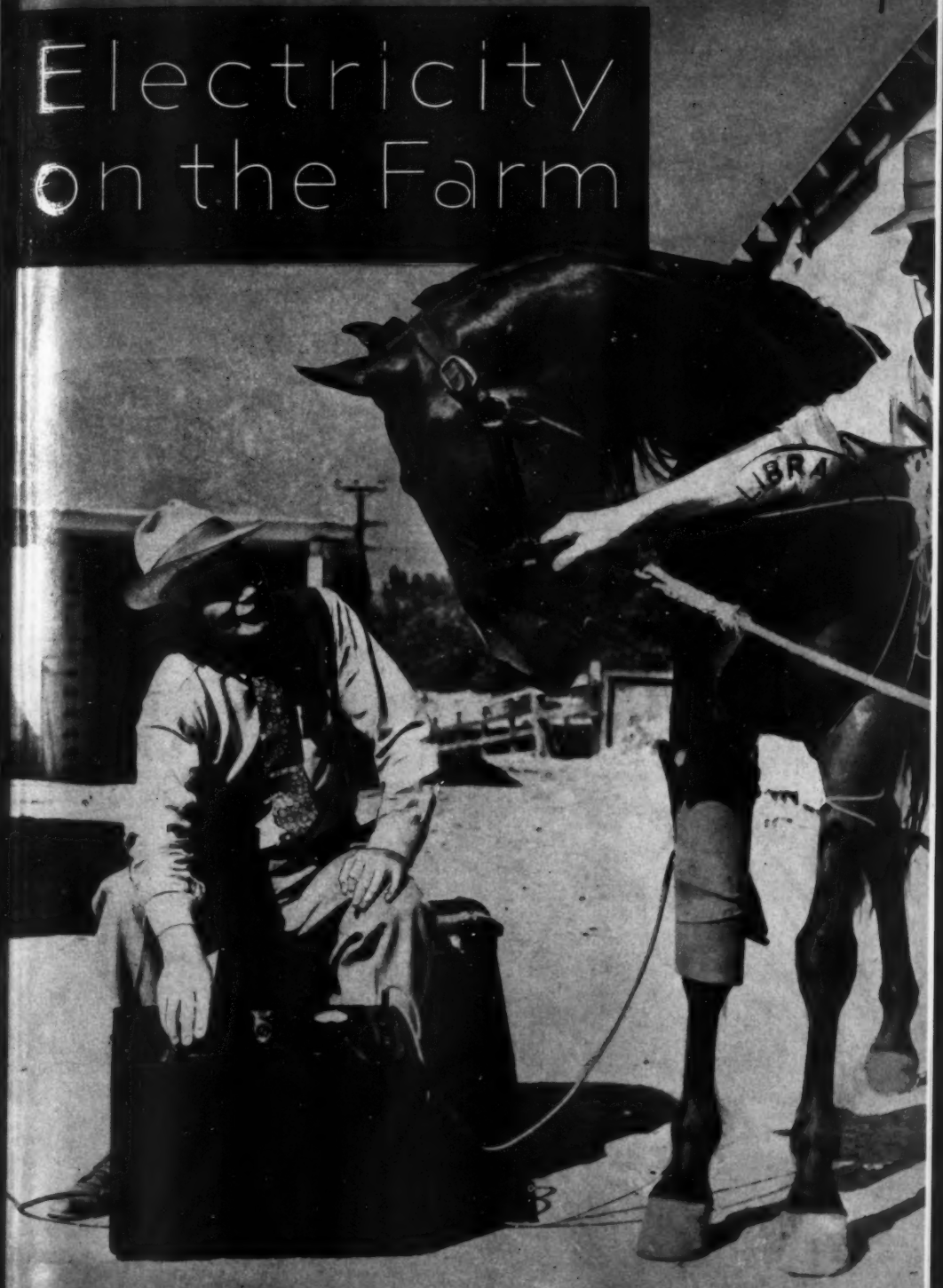
Electricity on the Farm



MAY 1939

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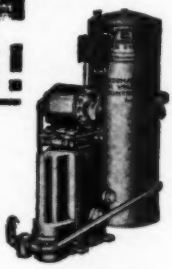

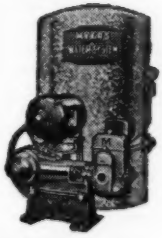

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Editor's Chat

FRONT COVER

"Mister, whatever you are doing feels good to my sore leg. What's in that box?"

The man is Dr. Lee de Forest, inventor of the audiotube which has made possible the sounds produced by the modern radio. Recently he has been working on the use of short wave discharges for the treatment of livestock. He is shown here experimenting in the treatment of a sprained tendon in a race horse. Dr. de Forest is the son of an Iowa preacher. He is now 65 years old.

HOMEMADE ELECTRIC FENCE

Do you like to make things at home in your shop? I do. Some folks like to make things just for the fun of it; others because of what they can save; and on the farm it is often because you just cannot send for a carpenter, a blacksmith or a plumber every time you need a trap nest, a U-bolt or a threaded pipe. A shop and the ability to make things are accomplishments and assets on a farm. But there are some things, the home building of which is questionable. Take the electric fence, for instance. Anyone can attach a wire from the lighting circuit to the fence and have an electric fence. It will stop a cow, too. The trouble is you may have to take time off to bury her. Electricity is a versatile something. When properly controlled and safeguarded it is one of the safest and most amazing helpers we can have; but you know and I know that it may also take life, either purposely or accidently. When you put electric current on a bare wire fence you are putting it out in the open where it can do injury to stock and to your family or to other persons if it is not properly controlled. Electricity can do some freakish things when turned loose on a fence wire. This is a poor place to take a chance on improvised homemade equipment. You may be entirely honest in thinking that you have a safe fence, but if some child with a less rugged constitution should be injured by it you would be stricken by remorse, and legally you might be convicted of criminal carelessness and sent to jail.

MANURE

Manure is an odorful subject for a chat. But do not jump at the conclusion that the odor is bad.

Once I owned a little stock in a large printing company. Close scrutiny of the annual statement showed that the net profit on the million dollar business for the year was just about equal to the receipts from the scrap paper sold—the "manure" of the printing business. Those profits from the "printer's manure" had a sweet smell to me.

A California poultryman sells ground poultry droppings for 20c per cubic foot. City folks are buying sheep manure in attractive packages from the 10c stores. In certain sections around Philadelphia horse manure is a principal item of commerce and transportation—wagon loads, truck loads, car loads, train loads, buildings full. It is valuable. It costs real hard money. It grows mushrooms.

As manure is valuable to other people, so is it valuable on the farm. It has advantages over straight commercial fertilizer because it contains humus which improves the physical and bacterial condition of the soil as well as the chemical. Like the printer's waste paper it may be the by-product of the farming business which represents the margin of profit on the operation.

You would not store your ammonium nitrate or superphosphate under the barn eaves or in the open to be leached away. This is the time of year when you will commence to notice the effect on pastures and crops of a wise plan of saving and applying manure: manure pits or yards for solid manure and manure tanks for liquid and solid manure from the cow barn.

What does this have to do with electricity? Nothing. Oh, perhaps a motor for operating a liquid manure pump. I just know it takes money to buy milking machines and motors; and manure helps make money.

* * *

Who ran to help me when I fell,
And would some pretty story tell,
Or kiss the place to make it well?
My Mother.

ANN TAYLOR, *My Mother.*

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• • EXPOSITION YEAR • •

Highlights of Interest to Farm People About the Golden Gate Exposition, World Poultry Congress at Cleveland and New York's "World of Tomorrow"

FARMERS!

Look to your automatic switches! See that your remote control thresher and hen feeder are in working order! Polish up the Seven-League Boots! This is Fair year; and it is the World-Fairingest year the United States has ever had.

First to throw the switches was the Golden Gate International Exposition. Switches? Yes, these fairs would be dismal flops from beginning to end without switches. When you go, just ask yourself what it would be like without electricity. San Francisco is celebrating the completion of the Golden Gate and Bay bridges, two marvelous feats of engineering ability. Of particular interest to farm people are the exhibits of the University of California displayed, as an ideal California farm, and of manufacturers of farm equipment, and perhaps the six miles of benches on which to rest when you're worn out from walking and looking. For those who have not been to the Coast, the Golden Gate Exposition offers an end point to a trip which should be no less interesting than the Fair itself. In the Southwest, there's Carlsbad Caverns, the Petrified Forest and Painted Desert, the Grand Canyon, Boulder Dam, the orange groves and Hollywood. Or if one is satisfied with less spectacular things, the oil wells, the vast open spaces with cacti, horned toads and road runners and the very friendliness and cleanliness of the West are appealing. Then there is Yosemite, the Coast Highways, the Redwoods, Crater Lake, the great snow peaks of the Northwest, Glacier Park, Yellowstone and the Black Hills.

The Seventh World's Poultry Congress and Exposition is another of the year's outstanding attractions. Starting as a scientific and educational congress in 1921, the Congress this year has developed into a great exposition sponsored jointly by federal and state governments, educational institutions, poultrymen and manufacturers of poultry equipment. In addition to the program in which authorities from many countries will participate, there will be an immense exhibit of all manner of poultry equipment and of poultry from this country and abroad. The dates are July 28 to August 7 and the place, The Public Auditorium, Cleveland, Ohio.

Trylon and Perisphere with their overcoats of scaffolding on in January.

Out on Flushing Meadows a few miles from the heart of New York City, one of the greatest expositions of all time is nearing completion, as this is written. The theme is "The World of Tomorrow"; the cost over $150,000,000. High spots of that vast display, so far as electrified agriculture is concerned, are the Walker-Gordon exhibit with a large herd of dairy cows and the world's most modern large scale electrified dairy including a rotolactor, and the Electric Utilities' completely electrified farm.

Despite the theme, "The World of Tomorrow", the electrified farm is very much of today, and not a dream place. In some contrast with the imaginative art and the futuristic surroundings, here is a little farm nestled down in New York City that any farmer will recognize as a farm. It covers an acre of ground, but 200 "acres" of the most modern of electrical farm equipment and ideas. Buildings are of conventional design but include such modern conceptions as electrified screens and rubber beds for cows.

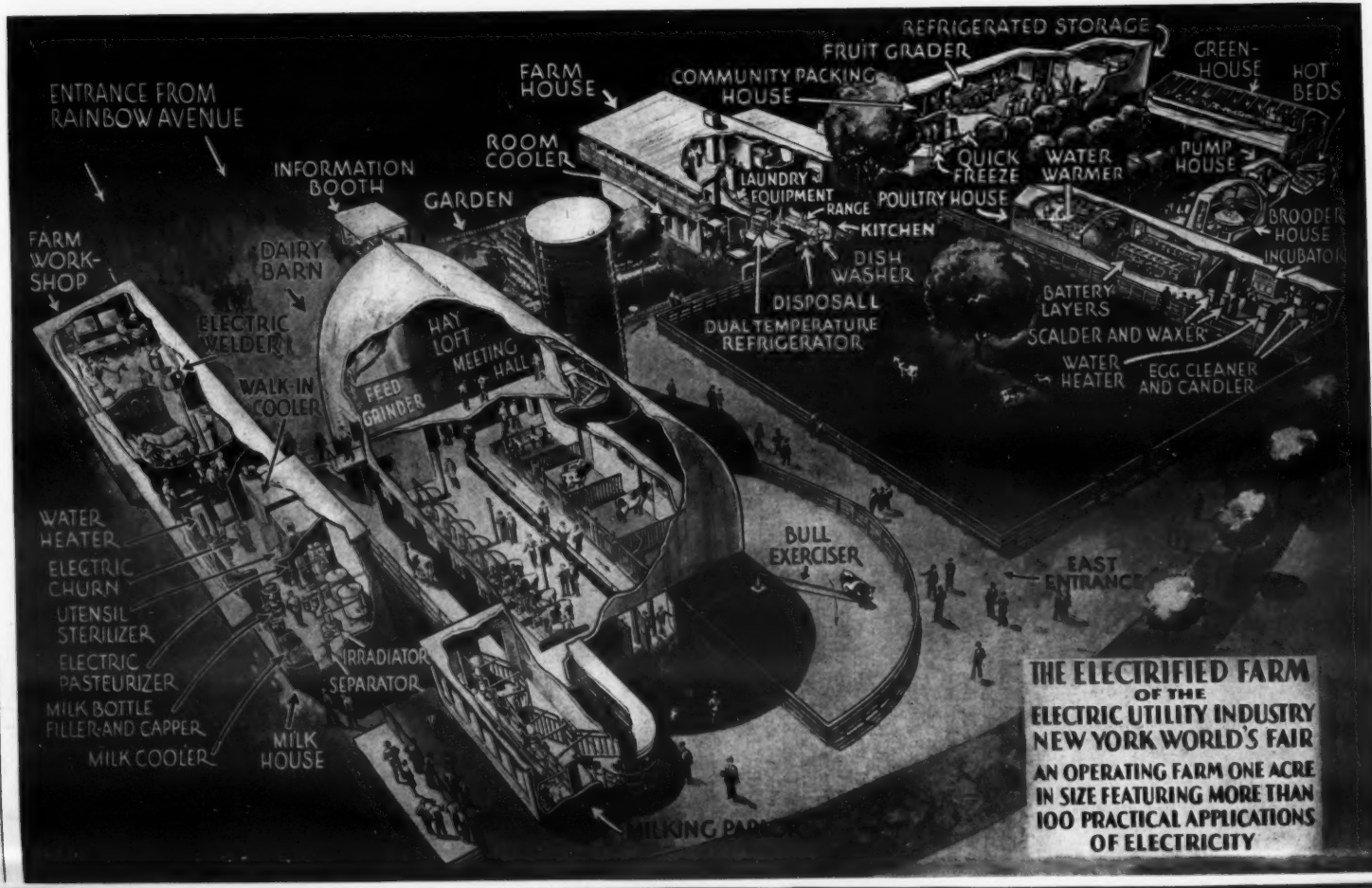
The house is a two story frame structure. The kitchen is of the super-step-saving kind with built-in cabinets, range, water heater, ventilating fan, radio, electric clock, garbage Disposall, dishwasher and many small electrical appliances. Of special interest is the two-temperature refrigerator where foods can either be frozen and held or stored at normal refrigerator temperatures. All the usual and unusual appliances such as vacuum cleaner, ironer, automatic clothes washer and drier and air conditioning units will be in evidence. The upstairs has been made into a cozy three room apartment where the superintendent of the exhibit will live during the fair.

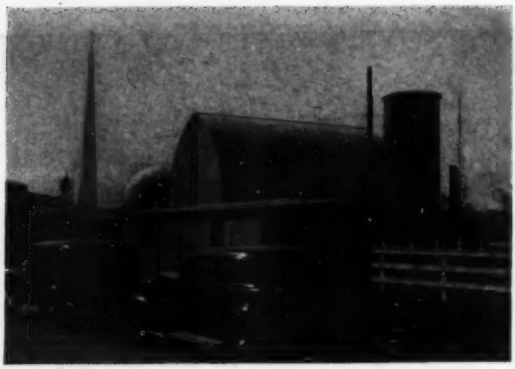
Electric Exerciser for Bull

Out on the farm there is an electric bull exerciser which takes the bull by the nose and walks him around to keep up his vigor and keep down his fighting proclivities. Electricity is wonderful!

Another thing which attracted my attention when I came by the other day was the feed processing installation. It is very compact, practically automatic with its overhead bins, blower elevators and automatic switches, and the machines—grinder, sheller and mixer—are all powered with ½ horsepower motors. The equipment is large enough for a herd of 50 cows.

There will be a two-cow combine milker of the kind which is becoming popular on moderate size dairy farms. The milk is not exposed to the air from the time it leaves the cow until it passes over the vitamin D irradiator in the milk room. Cattle will be supplied to the farm from famous herds by the different breed associations. A


ENTRANCE FROM RAINBOW AVENUE
INFORMATION BOOTH
GARDEN
FARM HOUSE
ROOM COOLER
COMMUNITY PACKING HOUSE
REFRIGERATED STORAGE
FRUIT GRADER
GREEN-HOUSE
HOT BEDS
PUMP HOUSE
QUICK FREEZE
WATER WARMER
LAUNDRY EQUIPMENT
RANGE
POULTRY HOUSE
KITCHEN
BROODER HOUSE
INCUBATOR
FARM WORK-SHOP
DAIRY BARN
DISH WASHER
DISPOSALL
DUAL TEMPERATURE REFRIGERATOR
BATTERY LAYERS
SCALDER AND WAXER
WATER HEATER
EGG CLEANER AND CANDLER
ELECTRIC WELDER
HAY LOFT
MEETING HALL
FEED GRINDER
WALK-IN COOLER
BULL EXERCISER
EAST ENTRANCE
WATER HEATER
ELECTRIC CHURN
UTENSIL STERILIZER
ELECTRIC PASTEURIZER
MILK BOTTLE FILLER AND CAPPER
MILK COOLER
IRRADIATOR
SEPARATOR
MILK HOUSE
MILKING PARLOR
THE ELECTRIFIED FARM
OF THE
ELECTRIC UTILITY INDUSTRY
NEW YORK WORLD'S FAIR
AN OPERATING FARM ONE ACRE IN SIZE FEATURING MORE THAN 100 PRACTICAL APPLICATIONS OF ELECTRICITY



What my camera saw on March 8. Calf lot at right, barn and tile silo in center behind contractor's shack, with Trylon and Perisphere, theme center of the "World of Tomorrow", in the background.

Jesse Moulton, Cornell trained farmer who will be in charge of the Electrified Farm at the New York World's Fair. He's a good fellow.

vacuum groomer, milk clarifier, cooler, bottler and an electric sterilizing cabinet are some of the other pieces of electric equipment in the dairy. A five horsepower ensilage cutter, an electric hay hoist, individual drinking cups and electric cow clippers are part of the barn equipment.

A lot of us are going to be interested in the shop with its electric welder, electric forge, drill press, tool grinders, soldering coppers and portable tools. There will be an old time blacksmith with young technique on hand to demonstrate the equipment.

Poultrymen will have an opportunity to see and get information about electric scalding and waxing equipment, coolers for holding up quality of summer eggs, incubators, battery and hover brooders, egg cleaners and graders, and ultra-violet irradiation for hens and chicks.

Would you like to see a frozen food locker big enough to put in all the meat, fruit and vegetables you would need for a year's supply, and without having to go to the locker plant to get it? It will be there,—a 30 cubic foot farm freezing locker, with its own refrigeration plant. In the same building, the Community Packing House, will be fruit cleaners and graders, potato grading and handling equipment, a ¼ horsepower seed cleaner and a display of pumps and water systems.

The low-cost farm greenhouse will be something of a novelty. It is not a glass house and it has no steam or hot water heating system. It is an insulated building with one row of windows on the south side in a sloping front and with electric lamps to supply all of the heat and light not supplied directly by the sun. Temperature and light will be under control so that results in plant growing may be obtained which are not possible in the ordinary glass house. There will probably also be some plants growing in the much talked of soilless nutrient solutions.

This Fair farm will not be an inactive place. Some fifteen men and women who have lived on farms will be on hand to keep the farm running in the normal way and to answer questions. The man who has been on the job to see that the farm was properly established is a farm boy from western New York state,—Jesse Moulton. He has been building and operating hay driers in the last few years in addition to farming. He will be in charge of the farm during the fair, and you will like him.

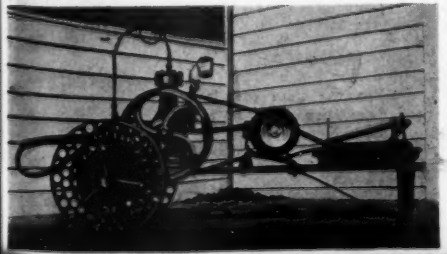
P. S. If you go to San Francisco in July you had better take your topcoat. There are chilly winds.

—*I'm proud I am a farmer*—

Handy Air Compressor

ENCLOSED is a picture of a handy air compressor which I have rigged up for use on the farm. It has been a big help to me and I would like to pass the idea along.

The compressor is from a discarded refrigerator. It is run by a ¼ h. p. electric motor equipped with a 4 in. pulley. The air intake has a tin can with open end soldered to a fitting and covered with fine cloth to act as a filter. The air discharge line is connected to a sediment bulb from a Model T gas tank which catches any oil vapor which may creep into the line. To the outlet of the bulb is attached 20 ft. of air hose with a clamp-on chuck. This is all mounted on a 1 x 10 in. board 3½ ft. long supported by two discarded wheels at one end a braced V iron at the other. On the front end of the board is a reel to hold my hose and cord.



The outfit may be pulled from garage to machine shop or used any place where there is a 120v. outlet. I do not know how high a pressure it will pump but I have pumped tires up to 70 lbs. In a recent test I found that it took me 5½ minutes to inflate a 5.50 x 17 tire to 36 pounds with a hand pump and just under 2 minutes with the compressor.—Ed. Oppenhoff, Kingfisher, Oklahoma.

Irrigation on the Harper Farm Near Gervais, Oregon

1. This pump, and 5 HP. motor, supplies water up to 350 gallons per minute for irrigating 25 acres by high pressure sprinklers. Electrical costs for one entire season amount to only $22 for four and one-half acres of Ladino clover pasture.

2. These Boysenberries developed four foot canes in ten weeks time as a result of four applications of water, a total of twelve inches.

3. This four and one-half acre pasture of irrigated Ladino clover showed a net return of $581.33, or $129.18 per acre.

4. For a month the alfalfa seed did not germinate. Then, when the field was irrigated, the seed fairly exploded and sprouted within 48 hours. A month later the alfalfa was six to eight inches high.

SPRINKLER RAIN

Produces Bigger Profits from Smaller Pastures

These Hard-to-Believe Results Show a $580 Profit From Irrigating 4½ Acres of Ladino Clover

By BEN MAXWELL

ROBERT M. HARPER operates an up-to-date farm near Gervais, Oregon. His accurate bookkeeping records show that 25 acres of farm crops, pasture and orchard, irrigated by electrical pumping, yield profits that make for an excellent farm living.

Knowing the costs before figuring the profits is a business axiom with this Oregon farmer. His 8 inch, 139 foot well cost $400. Pump and motor capable of lifting 350 gallons of water a minute cost $550. Add to this an outlay of $1050 for pipe, sprinklers and plumbing incidentals and you have a total investment of $2000.

Fixed costs that must be annually charged against the initial investment of $2000 include interest at 6%. This amounts to $120 per annum. Depreciation is figured at 10% or a total of $200 yearly. Here we have a total of $320 for annual, fixed charges or $12.80 per acre.

So what? Well, being specific, here is what it cost Mr. Harper to irrigate 4½ acres of Ladino clover last year and what were his benefits.

Ladino Clover a Money Maker

In 1938 this established pasture of Ladino clover received 6 applications or 18 inches of water through high pressure sprinklers. Interest and depreciation, the fixed costs, pro-rated by acreage, amounted to $56.47 for this pasture. Cost of electricity for pumping amounted to $22 while a generous labor charge for changing the sprinklers during the entire season added another $12 to costs. There you have it: Total annual costs for a year's irrigation of this 4½ acre clover field are exactly $90.47.

Now for the profits. Over a period of 6 months this pasture saved Mr. Harper $177 in cow feed: $64.80 on grain, $76.20 on hay and $36 on beets or silage. Add to this a 160 pound increase in butter fat figured at 28 cents a pound. That is $44.80. Eighty head of fattening feeder lambs also grazed this 4½ acres of irrigated pasture and increased $2 a head in value. That is $160 more. Then add the increased value of 28 head of feeder pigs with pork figured at 9 cents a pound and that makes $290 more.

What have you now? Total gross returns arising from this small, irrigated pasture of Ladino clover are $671.80. Deduct $90.47, total fixed costs plus operating costs, and $581.33 remains. That is the net return, or $129.18 per acre, profits from 4½ acres of pasture irrigated by electrical pumping.

In addition to this established pasture Mr. Harper covered 3 acres of new Ladino clover with 4 applications of water amounting to 12 inches. Also, he irrigated 3 acres of alfalfa, 8 acres of Boysenberries and 6 acres of filberts, prunes and cherries with 6 inches of water in two applications during the season. Lastly, one acre of cow beets was irrigated 5 times with 15 inches of water.

Last year alfalfa planted June 1 did not immediately sprout, so about July 1 it was irrigated. "Those alfalfa seeds just seemed to explode," is the way Mr. Harper describes the result. "Sprouts were showing within 48 hours. During July growth was rapid and 30 days after water was first applied the alfalfa was 6 to 8 inches high."

Boysenberries set out in late May also failed to start growing in this exceptionally dry season. A nearby field had already started to wither and die so Mr. Harper decided it was time to start doing something about his own. A good drenching with high pressure sprinkling performed the magic. Less than one per cent of his Boysenberries died and many plants within ten weeks after planting showed canes four feet in length.

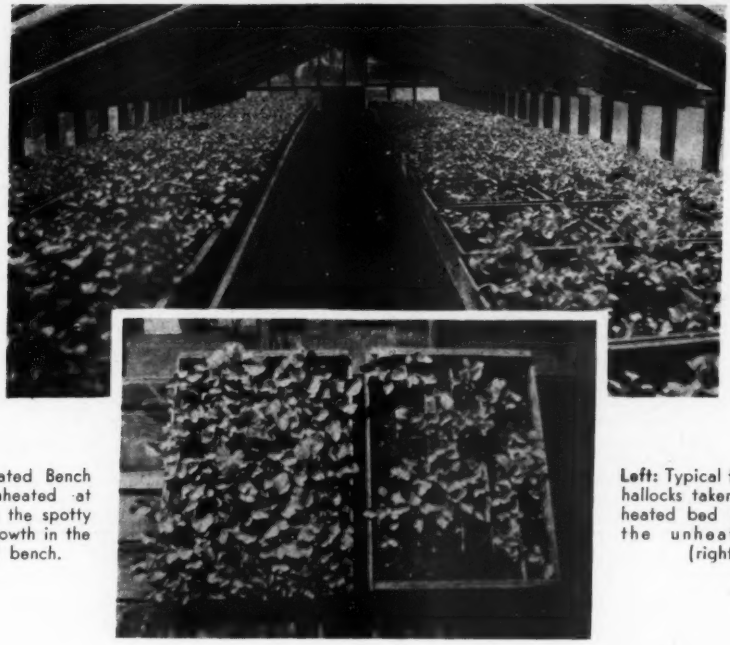
The excellent growth applied also to the 6 acre orchard of cherries, prunes and filberts. The trees looked more vigorous than before. The foliage was dark green, there were no sick trees and the planting was in splendid condition for a large, profitable yield this year.

One acre of irrigated cow beets contributed their story to the final chapter in this record of irrigation for profit. Without water an acre of beets in previous years yielded a maximum crop of 10 tons. Irrigation increased this production to 30 tons, which showed a gross profit of around $120 an acre with beets figured at $6 a ton.

Know your costs and then figure the profits is a sound, old-fashioned business precept with Robert M. Harper. Analysis of accurate records covering 25 acres of land irrigated by economical, electrical pumping gratify this Oregon farmer in both respects: low costs and increased profits.

* * *

EDITOR'S NOTE. This article sounds almost fantastic. We have a signed statement from Mr. Harper that the figures quoted and the statements made are correct. Furthermore, Mr. Harper's farm is not in an arid region. The rainfall is more than 40 inches per year. Much of it comes in the winter months, but until recent years irrigation in this part of Oregon was not thought to be necessary or profitable. Ladino clover responds excellently to irrigation. Trials in New Jersey and other sections of the United States make it appear to be a most promising crop. G. W. K.



Above: Heated Bench at left; unheated at right. Note the spotty and small growth in the unheated bench.

Left: Typical flats full of hallocks taken from the heated bed (left) and the unheated bed (right).

MORE MONEY FROM MELONS

Electrically Started Plants 45 Per Cent Better and Produce Melons Three Weeks Earlier When Prices Are High

By G. H. BLIESNER

WISE growers of many kinds of plants know that the fellow who gets his product on the market a few weeks earlier than his competitor is "in the money." Those two or three weeks may double the price received. And this applies to East Coast and West Coast, Maine and the Imperial Valley; tomatoes, potatoes, peaches and cantaloupes.

Geo. Asher, a melon grower of Grand Island, Washington, is wise. For several years he has been starting his muskmelons in the greenhouse in individual containers and gaining a few weeks on the weather by setting out started plants. His greenhouse is 15 feet wide, 45 feet long and 9 feet to the ridge. It was heated by a wood stove located in one end with a flue extending the entire length of the building. Two cords of wood were fed into the stove each season to put heat into the plants; but the growth was very uneven. Then he tried electric heat.

In the Spring of 1938 electric hotbed wire was installed in one bench 4 x 45 feet. Four inches of sand was placed on the bottom of the bench with the lead-covered wire two inches down from the surface. Seeds were planted in bottomless hallocks two inches square and four inches deep which were fitted into standard flats. The soil mixture used consisted of half soil and half manure run through a pulverizing machine. Four to five seeds were planted in each hallock and the flats placed over the heated sand. The other benches in the house had no electric heat, so the stove was fired enough to prevent frost damage. The same soil, seed and cultural methods were used for each bench except that the soil temperature in the electric heated bench was maintained by a thermostat at approximately 60°. After four weeks of heating the electricity was turned off for one week to harden the plants before they were set in the field.

Prior to 1938 the melon propagation was about 50 per cent. In the unheated benches in 1938 it was approximately the same. The electrically heated bed, on the other hand, came through with 95 per cent of its plants. The cost of electricity for the season for the heated bed was $5.00.

Plants in the heated bed were greener, with a sturdier stalk that developed more rapidly in the field. Melons from these plants were marketed three weeks before the melons from the unheated plants were ready.

Mr. Asher improved his melon crop further by using insurance against dry weather in the form of a sprinkler irrigation system. His yield in 1938 averaged 175 crates per acre on his 12 acres.

Information on muskmelon growing and handling is given in Farmers Bulletins 1145 and 1468 of the U. S. Department of Agriculture.

SUMMER MUSHROOMS Grown in Refrigerated Cellars

By H. H. SLAWSON

Mushrooms growing in "air conditioned comfort" in the Bogden Brothers' mushroom "cellar".

Electric Air Conditioning Helps Produce a Winter Crop for High Priced Summer Markets—and Does It Better

ARTIFICIAL weather, made to order by a modern air conditioning system is proving a "natural" for mushroom production in many places, with outstanding monetary success reported by the mushroom raising firm of Bogden Bros. at Frankfort, Ill.

To produce mushrooms successfully extreme care must be given temperature and humidity conditions at every step. Until the crop sprouts the specially prepared soil must be kept at 70° F. Then temperatures must be dropped quickly to 53° and held there until harvest. Too high a humidity produces a watery plant and develops mold. Drafts are dangerous, so velocity of air flow must be regulated.

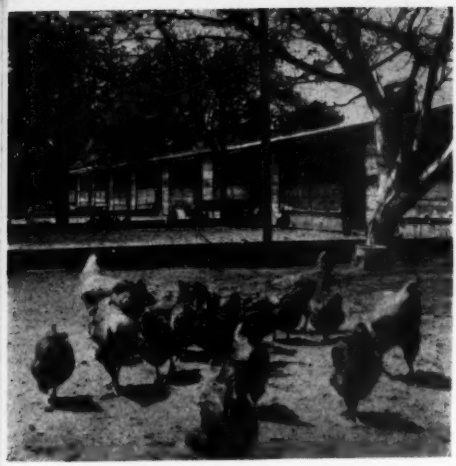
During periods of extreme summer heat fresh mushrooms are usually difficult to obtain and hotels and restaurants catering to epicures will pay high prices for them. At Frankfort the Bogden boys puzzled over this problem of how to grow mushrooms successfully so that advantage could be taken of the high-priced Chicago and St. Louis markets during the summer off-season when heat and humidity were unfavorable to growth.

Air conditioning, it was at length determined, would turn the trick ideally and a system was installed. This includes three 3-H. P. water-cooled compressors and a 1-H. P. motor to drive the fan that forces conditioned air through cooling coils and ducts at 28 miles per hour.

This takes care of 22,000 square feet of mushroom racks, stacked in tiers seven beds high. In summer, when mushrooms sell at $1.00 a pound, instead of the yearly average of 20 to 30 cents, net proceeds of this modernization are said to represent several thousand dollars of additional revenue.

While mushroom growing is a specialized industry not adapted to all farms, the consumption of mushrooms has increased greatly in the past few years.

In this "shack" modern air conditioning enables Bogden Brothers of Frankfort, Ill., to produce thousands of dollars worth of mushrooms the year round regardless of external weather conditions.



90¢ Per Hen
from
Ground Droppings

Lawrence Bly Using an Electric Hammer Mill Grinds Out Profits Many Poultrymen Miss

By L. H. SWEETSER

Mr. Sweetser, a former farmer and stockman has traded his pitchfork for a pen. He writes from his home in Sunland, Cal., and promises more money-making ideas.

LAWRENCE BLY, successful poultryman of Burbank, California, was at work at his electrically driven hammer mill. He was grinding out dry poultry droppings at the rate of 50 sacks an hour, 55 pounds each. I asked whether it paid to go to all that work to grind the stuff.

"Well," he replied, smiling as he swept sweat from his brow, "they say work keeps a fellow healthy. And besides, this kind of work makes each of my grown Barred Rock hens bring me 90 cents clear velvet, yearly, from the droppings. I think that pays."

Then he went on to tell me more about the business.

"We get approximately 5 cubic feet of droppings from a mature hen yearly. When ground with some of the peat moss litter from our brooders, it sells readily at 40 cents a sack, right at the gate. A sack holds a little less than 2 cubic feet. Droppings, as scraped from the boards, sell at 7 cents a cubic foot. Ours when ground bring more than 20 cents a foot. It takes 4 days a month for a man to do the grinding and grinding increases the sales value of the droppings approximately $100 a month. We consider $25 a day pretty good wages, here.

"Folks drive in here for this stuff, and keep us cleaned out. It is in demand for truck gardens, estates and lawns. Green and lumpy chicken manure is strong and will burn plant growth. But this is dry and pulverized. It is a natural fertilizer; the best for lawns and gardens that can be procured.

"An ordinary hammer mill with a ⅛ inch screen is used for doing the grinding and a 7½ horse power electric motor furnishes the power. We began operations with a gasoline motor from an automobile. We soon discarded this for the electric motor, which we found much more economical and satisfactory. We use electric energy all over the plant. The cost of power is low and replacements are negligible."

Mr. Bly is junior partner of Riese and Bly, who started by buying an unimproved poultry farm, on time, 19 years ago. They now have one of the most successful poultry plants in the San Fernando valley. Their specialty is fattened dressed fryers, packed in cartons and retailed from a wayside booth on their premises.

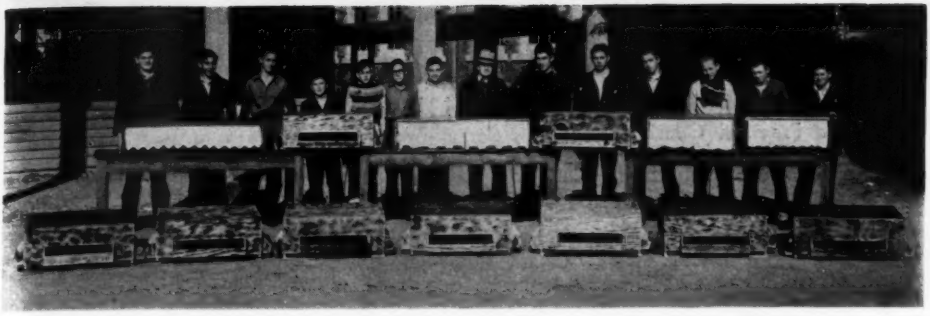
"We brood in small lots," Mr. Bly explained, "and our electric brooded birds reach a weight of 3 pounds, 5 days earlier than those we formerly brooded with gas. They feather quicker, mature quicker, and are perfectly healthy.

"From the start we have conducted this business on the theory that the highest quality product makes its own market. All of our products are offered only in finished condition, and then sold at retail. We use strict economy in operation. That is why we switched to electricity."

I drove away from the plant at dusk. The American flag, at the attractively painted sales booth, was being lowered from its tall pole. Electricity was again in evidence here, as glowing searchlights illuminated large signs which tell of the products these poultrymen have for sale. It was a striking picture, not to be passed unnoticed by fleeting motorists rolling along the road.

Upper: Egg and meat makers? Yes, and workers in a fertilizer plant who turn out ninety cents worth of product per bird per year.

Left: "It takes four days each month to grind, and the grinding increases the sales value $100. We consider $25 per day pretty good wages."



Future Farmers of America and Brooders of Their Own Making.

Future farmer students of Luther Burbank High School, near Houston, with the brooders they built for the contest. Left to right: Ross Patton, Joe Bruscia, Arthur Burks, George Harrison, Claud Cunningham, Herman Lieske, Fred Cluney, John H. Seward, Instructor, Gerald McMillan, Eddie Tillman, Dacey Wev, Arthur Beinhorn, Robert Lee Williamson and Weldon Davidson. Just a good sample of the boys and brooders entered in the contest.

Texas F.F.A. Build 120 Brooders

By G. W. PATTILLO
Houston Lighting and Power Co.

A FIRST prize of $50.00 cash and other prizes consisting of .800 baby chicks, 12 I. E. S. lamps and 12 sacks of chicken feed started 150 South Texas farm boys building electric brooders for entry in a recent contest sponsored by the Gulf Coast Poultry Council in cooperation with the Houston Lighting & Power Company, the Houston Fat Stock Show, Radley's Houston Hatchery, Ruark Hatchery and Downman Grain Company, all of Houston, Texas.

Twelve Vocational High Schools in the Gulf Coast territory entered the contest on January 15th and their Future Farmer students fell to work building electric brooders to compete for the big array of prizes, and since all were farm boys, to use in poultry production on their own farms. The boys' families caught the spirit of the thing and they together with some of the Vocational Teachers, financed the purchase of heating elements, thermostats, etc. which the boys of course could not build for themselves.

Milton Block, 19-year-old senior in Crosby, Texas, High School, receives the $50 first prize for the best homemade electric brooder from Mr. J. W. Sartwelle, Pres., Houston Fat Stock and Livestock Association.

One of the most interesting phases of the contest and a good indication of the popularity of ELECTRICITY ON THE FARM in this section was the fact that every brooder built was designed for electric operation.

The brooders were judged on the basis of workmanship, materials, ventilation, heat control and efficiency, wiring, insulation and the attraction light; and the judges, Mr. E. D. Parnell, Dept. of Poultry Husbandry, A. & M. College and Mr. P. T. Montfort, Research Director of Rural Electrification, A. & M. College, had considerable difficulty in deciding the winners.

According to Mr. Parnell and Mr. Montfort, an activity such as this will work three-fold for farmers and farm boys; first of all, it encourages the boys, their parents and neighbors to use modern brooding methods in the raising of poultry; second it is a means of their acquiring reliable equipment at low cost; and third, the combination of the two will improve the poultry raising standards and cash income of the farmers.

Eighty-eight brooders were entered in the contest and some 30 or 40 additional were built but not completed in time. All of these will go into use on the farms of these boys and will no doubt encourage many of their neighbors to build or buy electric brooding equipment this year or next.

A YOUNG American found himself seated next to the eminent Chinese, Wellington Koo, at a diplomatic banquet. Completely at a loss as to what to say to a Chinese, this young man, with a touch of genius such as may be detected only in real *faux pas* makers, said, "Likee soupee?" Mr. Koo smiled and nodded. Several moments later, when called upon to say a few words, he delivered a brilliant talk in flawless English, sat down while the applause was still resounding, turned to the young man and said, "Likee speechee?"—*Scholastic.*

POINTERS ON PUMPS

Some Practical Considerations in Selecting and Using a Farm Water System

By GEO W. KABLE

1. BEFORE selecting a water system, determine the amount of water per hour you wish to pump. This will depend on (a) your greatest demand for water, and (b) the amount of water available in your well or other source.

2. Demand. Your greatest demand may come when watering stock, or when a number of cows are drinking from drinking bowls at the same time. Estimate it. 100 gallons per hour will supply a ½ in. faucet at the sink, but would not be enough to supply a faucet and a shower bath at the same time. An ordinary garden hose nozzle discharges around 300 gal. per hr. You may want to prepare dinner or wash the milk utensils while sprinkling the lawn. A good stream under pressure when a fire starts is excellent fire insurance. It is bad judgment to buy a water system on price alone. It should be capable of giving you plenty of water under good pressure whenever and wherever you turn it on.

3. Supply. Check capacity by pumping. The driller should test it. Or compare with capacities of nearby wells. Nothing is gained by putting a 500-gallon pump on a 250-gallon well.

4. Large pump vs. large pressure tank. Where the water in your well is less than your greatest demand; where you are pumping with a gas engine or a non-automatic pump which has to be started by hand; or where your electric service is very unreliable it may be desirable to use a large pressure tank (possibly 500 gal.). Otherwise use a smaller tank and larger capacity pump. The most popular size tank is 42 gal.; next 80 gal. The disadvantages of larger tanks are cost, place to house them, and stale water. Very small tanks cause pumps to start and stop very frequently. Standard pump sizes are approximately 250, 350 and 500 gal. per hr. To pump the same total quantity of water requires about the same amount of electricity for any of the three sizes.

5. With any pump you will some day need service or repair parts. Buy a pump manufactured by some one whose reliability and service you trust, and from a local dealer who can be found and depended upon when you need him.

6. Shallow well pumps of centrifugal, turbine or reciprocating type are satisfactory for suction lifts of 15 to 22 ft. and pressures up to 350 lbs. For lifts between 22 and 100 ft., jet type pumps are becoming popular. They do not need to be placed over the well. Deep well pumps (cylinder in the well with working head directly over the well) may be used for lifts of 22 ft. to any depth.

7. Shallow well pumps should not be connected directly to the driven pipe of a driven well unless the well is in porous sand. Water rises in the suction pipe due to pressure of the atmosphere. If the pipe is driven through dense clay the pressure of the atmosphere is excluded from the water bearing stratum. Use a smaller suction pipe inside the drive pipe.

8. The simpler the pump, the less to get out of order. Be sure it is built and placed so you can get at it to make any necessary repairs. If located in a light, accessible place you will be more apt to keep it cleaned and oiled.

9. Avoid long suction lines on shallow well pumps where possible. The friction of water against the pipe is equivalent to increasing the lift and calls for larger pipe. Pumps with long suction pipes are hard to prime. Install the pump near the water and run the discharge line to the house. Suction lines should slope uniformly upward from source to pump. Avoid pockets, loops and as many fittings as possible.

10. A pump and its motor need very little care, but what they need, they need. Oil, electrical parts and switches dry, air valves operating, are some of the needs.

11. Pressure tanks should be about ⅔ full of water and ⅓ full of air. This air cushion must be maintained or the pump will start every time a small amount of water is drawn. Air is compressible; water is not. If there is not an automatic air valve on the tank, air must be pumped in or the tank completely drained and then closed before starting to pump. Modern water systems all have automatic air pumps or valves and controls.

12. If you have a hot water tank with a coil in the furnace or range, be sure to have a pressure relief valve on the hot water tank. If you do not, and the water should become overheated, as it sometimes does, the pressure would back up against the valves of the pump and might get high enough to cause an explosion. That is not necessary in a city because the steam pressure can back up in the water mains.

13. Have your pump on a separate electric circuit with the wiring so located that it is not likely to be cut off in case of fire. A switch for completely cutting off the pump circuit, when it is necessary to work on the pump, is desirable.

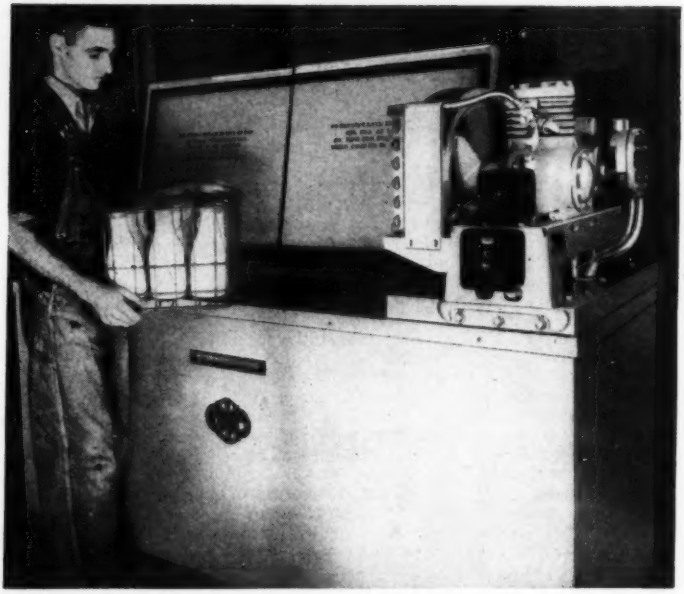
Repairing Dairy Floors

Cracks in concrete floors in milk houses and dairy barns are readily repaired as follows: Cracks exceeding one-fourth of an inch in width should have the edges straightened and smoothed with a chisel, swept clean, then filled with cement-sand mortar, made of one part sand and one part cement wet enough so that it will penetrate the cracks readily and permit a smooth surface finish. Small cracks in floors and between floor and wall can be sealed by using ordinary road asphalt heated in an old coffee pot or tea kettle and poured into the cracks while boiling hot.

W. C. Krueger, N. J. Extension Service

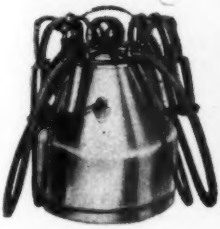
Solve Your Milk Cooling Problems with a McCormick-Deering Cooler

McCormick-Deering Milk Cooler owned by James N. Peterson, Horton, Kansas. Mr. Peterson, who milks 14 cows, reports operating costs of only $3 a month. Before buying this unit, cooling costs ran about $30 a month.



NEW!

Stainless Steel Pails Are Now Available for McCormick-Deering Milkers



The economy of the McCormick-Deering Milk Cooler reported by Dairyman Peterson of Kansas is typical of the experience of thousands of satisfied users from Maine to California who have found that these units solve their cooling problems.

This user satisfaction is the result of many superior McCormick-Deering features. Among these are: exclusive patented pneumatic agitation, which means complete circulation of ice-cold water all around the milk cans, cooling milk to 50 degrees or below in an hour or less, twice every 24 hours; sturdy, fully enclosed electric motor; unusually large air-cooled condenser; automatic splash-lubrication compressor; automatic temperature control bulb; and galvanized, all-steel, rust-resisting tanks.

The cooler line includes regular-type units in 4, 6, 8, 10, and 12-can sizes; combination units with dry compartments in 2, 4, 6, 8, and 10-can sizes; and 4-can-in-line coolers.

Plan now to buy a new McCormick-Deering Milk Cooler. Remember, too, the complete line of McCormick-Deering Cream Separators and Milkers. The International Harvester dealer near you will be glad to be of service

INTERNATIONAL HARVESTER COMPANY

(Incorporated)

180 North Michigan Avenue **Chicago, Illinois**

McCORMICK-DEERING

MILK COOLERS • MILKERS • CREAM SEPARATORS

Electrical HOUSEKEEPING

Conducted by GAIL MEREDITH

Hiding the Mixer!

By MABEL A. SANFORD

ONE of my most valued "time savers" in my busy life on the farm is my electrical mixer. Here in the country, where eggs are plentiful, and good food is the rule, this electrical contrivance is worth its weight in gold.

But it used to have one drawback. I needed all of the space on my kitchen table. I begrudged it a place. And in my hurried rush about my kitchen, or during the last minute effort to get the meal on to the table piping hot, there was no time to wash and clean this electric mixer. I hated to leave it sitting around in the way or dirty. And yet I used it so much.

"Why don't you put it away in your cupboard and see no more of it?" asked my husband one day, exasperated at my grumbling.

That gave me an idea. So I found a corner of one of my cupboards that had a separate, outswinging door. I discovered that the mixer would fit into there with ample room to spare for bowls and equipment. I could even put a large hook into the side wall, so that I could roll the electric cord up and hang it on the hook when I was not using the mixer. I put a washable tray under the equipment to catch any drippings that might fall before it was washed and cleaned.

Now it is out of the way. And when I have used it all I have to do is to close the cupboard door and leave it completely out of sight until I am ready to clean up. No longer are there any irritating circumstances to mar my pleasure in the electrical contrivance that beats and whips so marvelously and saves me many an aching arm and back. I am glad to pass the suggestion on to every housewife who owns a mixer so that she can find a cupboard space for hers.

• • •

For Cleaner Cleaning

SOME push them fast, and some push them slow but the slow pushers are farther ahead in the long run. I'm talking about the women behind the vacuum cleaners now. You just have to give your cleaner time to do the job. It takes time to loosen the dirt sunk down into the base of the rug and it takes time to get it out after it is loose.

If you do not honestly know whether you push that cleaner fast or slow, it wouldn't hurt a bit to read over again the instructions the manufacturer of the cleaner tied to its handle. Then accurately time your strokes to the speed he recommends.

You can't just amble over the rug once and expect the machine to do a good job, either. The nozzle ought to move over every bit of the rug several times to get all the dirt.

Once or twice a year, maybe oftener if the traffic is heavy, some women clean their rugs on the wrong side, too. They start out as usual, cleaning the rug as it is, then turn it over and vacuum the back well. This gives the cleaner a chance to loosen up heavy dirt it may not have lifted through the pile. Then after the rug is turned back, they go over the right side again.

You probably know that the proper adjustment of the nozzle to the pile of the rug it is cleaning is important for good work. If you have been overlooking this, just remind yourself that to do its work well, the vacuum cleaner should have an unbroken flow of air going into the nozzle and through the bag. If the nozzle is high up off the rug, the air will flow through the bag all right, but it whizzes over the top instead of through the rug. And if the nozzle is pressed down too tight, the rug is drawn against it so there is small chance for the proper agitation. Moreover, if the nozzle is too tight to the rug, the cleaner is hard to push.

Some of the women who work with cleaners suggest that we can be pretty sure of the right adjustment if there is just room enough between nozzle and carpet to slide a pencil through.

So, unless you have one of those brand new cleaners that needs no adjustment, but will give

Every house needs
Westinghouse
FOOD SAVINGS
$4 A MONTH
Kitchen-proved
on Ohio farm!
Westinghouse Proving Kitchen No. 924 in farm home near Zanesville, Ohio. Miss Ruby E. Bussemer, hostess.

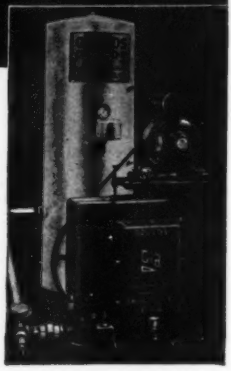
Meat stays fresh 7 days, says Proving Kitchen Hostess

Miss Ruby E. Bussemer, hostess of Westinghouse Proving Kitchen No. 924, near Zanesville, Ohio, says the big Meat-Keeper of the new 1939 Westinghouse Refrigerator is her favorite feature because "in the country keeping fresh meat has always been a problem." She estimates that the Meat-Keeper will save $2.50 a month and other food savings will average $1.50 a month throughout the year.

For the first time in any refrigerator the 1939 Westinghouse provides True-Temp Cold Control that lets you select the refrigerator temperature you want and then holds it steady despite fluctuations in kitchen temperature. See it at your dealer's. Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.

Westinghouse Refrigerator

PLENTY *of* WATER NEEDED



Nothing takes the place of water where and when needed. But be sure you always have enough — plenty for cleanliness, health and convenience in the home, plenty for crops and stock, and plenty for fire protection. Install a Goulds CID Water Supply and get ample capacity for your money—for today and for the future. A Goulds CID Water System will give you a maximum supply per dollar invested—with utmost freedom from need for servicing over a long term of years.

Once you have a Goulds CID System installed, you are all set with plenty of water for every farm purpose.

See your nearest dealer—he can show you an economical Goulds CID Water System with quiet smooth running pump that will bring you convenience and health, improved crops, better stock, greater security and lasting contentment.

GOULDS PUMPS, Inc., 340 Fall St., Seneca Falls, N. Y.

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8899

you just the right cleaning for any rug, thick or thin, you had better remind yourself when you go from one room to another or from carpet to bare floor, that changing that lever a notch to readjust the height of the nozzle will give your cleaner a chance to do a better job.

Because the belt on your cleaner is out of sight is no reason for it to be out of mind, too. Belts need to be changed now and then, so it is a good idea to inspect the tension of yours occasionally.

A wise woman watches the path ahead of her so she can pick up pins or glass or an odd tack before they are gobbled up into the nozzle of the machine. These things may nick the blades of the fan or punch holes in the bag.

Some machines need oiling and some don't. The only way to be sure that yours gets the right care is by keeping that instruction sheet at hand and reading it now and then to remind you.

If you want good service from your cleaner, you just have to treat the bag with considerable respect. If you remember that the cleaner sort of breathes through the bag, you will see why it has to be emptied often and thoroughly cleaned several times a year. This cleaning should be a good brisk brushing, but never washing. Washing removes the filler that helps make the bag dust-proof.

If there is a brush on your cleaner, you'll probably be wise to examine it every few weeks and unwind or clip off the threads wound round it.

All these things you can do yourself, but if the motor starts sparking, that is a job for a repair man. Moreover, you will be well advised to give it to him in good time before the sparking has a chance to damage the motor.

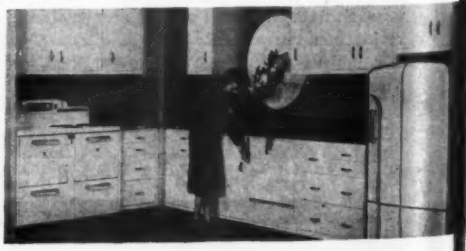
• • •

In the Right Place

THERE is a reason for putting your refrigerator along side a good work space and close to cabinets that hold dishes and tools and supplies for preparing foods. This grouping makes what the kitchen engineers call the "storage and preparation center" and it gives you a working arrangement that can't help cutting down the steps you take in getting the meals.

Suppose you are making a cake. Here are the butter and eggs and milk in the refrigerator at your elbow. The flour and sugar are in bins in one drawer of the lower cabinet, the flavoring, leavening, salt on a shelf above. With the tins in a verti-

The refrigerator is conveniently placed in this beautiful L-shaped kitchen.



cal file at one end of the cabinet, with spoons and measuring cups and spatula in a drawer in front of you, and the mixer on the counter to do the work, you could mix that cake where you stand, and then just walk across the kitchen to put it in the stove. Have I forgotten something? I hope not.

Another refrigerator adjoins a room work counter with cabinets for staple supplies and tools.

Isn't it worth a little head work and rearranging to get your materials for one kind of job together, and to put the refrigerator in the handiest place for you?

If it is not possible to have it join the work counter on the same wall, you may be able to place it at right angles to the work space, or in a narrow kitchen, directly across on the opposite wall.

Since you are going to open that refrigerator many times a day to get at the food, you need to have the door hung right for its location. It should, of course, open toward the work counter. If it were hinged on the side toward the counter and the door opened away from it, you would have to walk around the door every time you wanted to reach into the refrigerator. You can see what a nuisance that would be.

After you settle on the best place to have the refrigerator, have the men put it in with room at the back or sides for free air circulation.

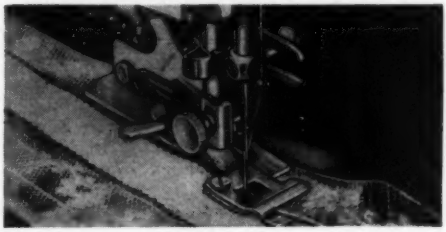
In certain studies made in Nebraska a few years ago, a couple of agricultural engineers, Mr. Lewis and Mr. Brunig, found that from 35 to 50 percent increased operating cost may be incurred by what they called faulty enclosures, that is by setting the box tight against the wall or building cabinets too close to the top. When the compressor unit is on top of the cabinet, they say the alcove ceil-

The cabinet is built several inches above the refrigerator to leave space for air circulation.

THREE CLEVER TIME-SAVERS
by Singer

Self Skirt-Marker **79¢**

Clamp this skirt-marker on a door at the desired height, squeeze the bulb as you turn—and get an even chalk line for hemming.



Zigzagger **95¢**

With this amazing gadget on your sewing machine, you can apply lace to lingerie or applique monograms, or make big zigzag stitches for decorating linens and curtains. Looks like fine hand-work!

Singercraft Guide **50¢**

With this you can make rugs out of rags, stockings, or yarn—right on your sewing machine! Easy and fun! Directions included.

I am enclosing (stamps / money order) for which please send me:
☐ Skirt-Marker ☐ Zigzagger ☐ Singercraft Guide
*Name*_____
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"PACEMAKER" includes 250 G.P.H. Automatic Shallow Well Pump — 42 gal. Galvanized Tank — Relief Valve — Special Motor — Choice of Automatic Air Volume Control or Water Level and Pressure Gauge — Fresh Water Valve — Fittings between Tank and Pump. Complete for $70.00 list. Write for name of Uniflow Dealer.

Pumps from **$40.00** *up. Systems from* **$47.00** *up.*

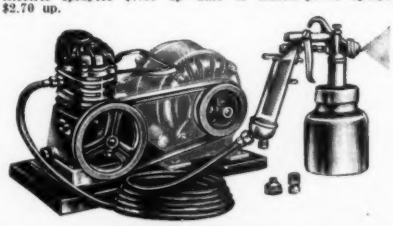
DEEP AND SHALLOW WELL PUMPS AND SYSTEMS
UNIFLOW MFG. COMPANY ERIE, PA.

Speedy PAINT SPRAYERS

YOU'LL LIKE THIS NEW "CHALLENGE" No. 551

New! Different! Better! Mounted on spring suspended steel base. Delivers 1½ to 2 cubic feet of free air per minute at any pressure up to 50 lbs. per square inch. Die-cast parts—hone-polished cast-iron cylinders—cast and machined pistons—oversize bearings—positive ring-feed oiling system—no oil pumping or "oily" air—V-belt drive—internal mix No. 121 spray gun—for paint, lacquer, kalsomine, enamel, varnish insecticides—faster, smoother, better. **$18.75**
Lists complete, less motor at only.....

Send for Speedy Sprayer handbook, price list and catalog. Electric sprayers $7.50 up—auto or tractor-power sprayers $2.70 up.



W. R. BROWN CORPORATION
Dept. C—5720 Armitage Avenue, Chicago, Ill., U. S. A.

I Make A Good Cup of Coffee This Way

(Winning Letter for February Contest)

I make a good cup of coffee by paying strict attention to the three main essentials: a clean pot, fresh water, a good coffee that is fresh.

My coffee pot must be spotlessly clean, so the flavor of the new coffee will not be spoiled by any stale flavor left in the pot. I wash my vacuum coffee maker with good warm soapsuds and rinse it thoroughly. I wash my percolator with hot, soapy water, scour the aluminum parts, use a percolator brush on the spout, and keep the brown deposit scoured from the inside. I always thoroughly wash and scald my little two-cup china drip pot and keep its aluminum parts scoured.

I believe that it is impossible to make a cup of good coffee with water that is not absolutely fresh. Water that has been boiling away in the tea kettle has all the "life" cooked out of it. I run the water off for a few minutes, bring it to a boil and put it in my coffee pot—whichever one I may be using.

A "good" coffee is not, necessarily, an expensive coffee. I, personally, use a very inexpensive coffee which is rated one of the "best buys" by a consumers' testing organization to which I belong. I make delicious coffee with it.

I use a heaping tablespoon of coffee to each three-quarters cup of water. I think much poor coffee is the result of using too little coffee. Better coffee is made by using more coffee and cooking it a shorter time.

I use the drip grind in all three of the above-mentioned pots. I find it works satisfactorily in the percolator and it would not pay me to buy both grinds.

The coffee must be fresh. I buy it in the bean and have it ground. The longer coffee stands exposed to the air after grinding, the less aroma it has. So I buy only enough for one week at a time.

Yours for better coffee,

NELLIE YATES ROTZEL.

ing should be 12 inches or more above the coils, and where the compressor unit is enclosed within the cabinet and receives ventilation either through the back or sides, a three inch space must be provided at the back or the sides in addition to a space at the top.

Down in Georgia where the weather stays hot longer—I'm not one to enter into any discussion about which state has the hottest days—Mrs. Gartrell Danner in a study of household refrigeration recommends keeping the refrigerator at least four inches from the back wall.

Have it convenient, when you put a refrigerator in your kitchen, and give it room to get rid of the heat driven out of the box by the compressor.

Secret Agents

MOLDS and bacteria are two agents that cause food spoilage. We cannot see them or their effects until they are well developed, but we may be sure that they are right there living on the food we want ourselves.

Sometimes the storage and preparation center grows around the refrigerator.

In the race to see which one gets it, the molds or us, cold is an obstacle that holds them back. It does not destroy them, but it slows down their multiplication, and so postpones their getting complete control. Most of them grow very slowly at a temperature below 50 degrees. That is the primary reason for refrigeration. By keeping food constantly cold, we win the race.

The cellar floor will not do, nor the pantry, nor the back entry. Perishable foods should be kept at temperatures above freezing, but below fifty, says the United States Department of Agriculture. There are no two ways about it: it takes a good refrigerator to do that.

Cheese and Egg Salad

2½ cups cottage cheese
2 hard cooked eggs, chopped
½ cup cream
10 lettuce leaves
⅔ tbsp. grated onion
⅛ cup chopped olives
⅔ cup whipped cream
1 pimento

Mash the cottage cheese until fine, add the cream, eggs, onion and olives. Serve on lettuce garnished with strips of pimento and any dressing desired.

May Contest

I do not know how many of you have locker storage for frozen foods, but if you do, here is a chance to tell us, your distant neighbors, how it works. This month the letters for our contest will be about experiences with this sort of refrigeration. We'd like to have you describe the plant very briefly, tell how big *your* locker is, what there is in it, and what you have used it for over a period of a year, let us say. You might wind up by giving us your opinion of its help in your job of planning meals for your family.

The contest will close May 20. The writer of the winning letter will receive $5.00. If we use any of the other letters later, we will pay $1.00 apiece for them.

Address letters to Gail Meredith, 1026 Seminole Highway, Madison, Wisconsin.

YOUR Money Buys MORE WITH AERMOTOR

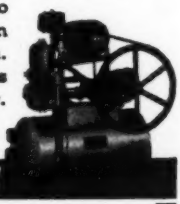
More Modern Features and NEW LOWER PRICES

● You get more for your money in an AERMOTOR Electric Water System. Prove this for yourself by an examination. You'll see greater value everywhere—numerous modern features and advantages. Look especially at these:

(1) U-BAR CONSTRUCTION. Generally accepted as the greatest pumping improvement in recent years. It keeps gear case closed and keeps out dirt and water. Insures longer life and saves costly repairs.

(2) FRESH WATER SYSTEM. This valuable convenience gives you cool, fresh water directly from the well. Built into every Shallow Well unit, it is another evidence of extra value.

● Thus, you owe it to yourself to inspect an AERMOTOR System. The present low prices will save you money.



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Gentlemen: Please send me a FREE copy of your "FACTS" Book about AERMOTOR WATER SYSTEMS.

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CITY CONVENIENCES TO THE COUNTRY
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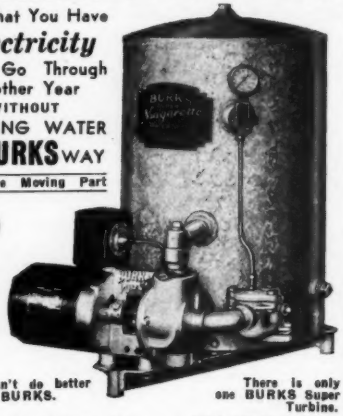
WATER SYSTEM

"ONLY ONE MOVING PART"
CAPACITIES—240 TO 1700 G.P.H.

Now That You Have
Electricity
Don't Go Through
Another Year
WITHOUT
RUNNING WATER
THE **BURKS** WAY
Only One Moving Part



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There is only one BURKS Super Turbine.

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BUYERS' INFORMATION SERVICE

As a reader of ELECTRICITY ON THE FARM you are entitled to our buyers' information service free of cost. When looking for information about equipment or material that you plan to buy, first read carefully the advertisements in this issue. They are your best guide. Then, if you do not find what you want, just use the coupon below to tell us what you need and we will see that you get the information you want.

USE THIS READER SERVICE COUPON
The more clearly you specify what you want, the more exactly we can meet your requirements.

ELECTRICITY ON THE FARM
Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

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My name is .....

Address .....

I get electricity from .....

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Check here ☐ if dealer. 5-39

Baby Chicks Fly to South America

By G. H. DACY

A BATTERY of three electric incubators with a combined capacity of 57,000 baby chicks is busy down in southern Florida producing baby chicks and turkey poults which fly away to Peru, Rio de Janeiro, and other South American cities shortly after the pipping period. They do not fly to a southern clime under their own wing power but travel to South America in the majestic clippers of the Pan American Airways System.

Attempts were first made to transport selected settings of eggs to progressive poultrymen in South America from Miami and Brownsville, Texas. The first air shipment of 12 dozen eggs arrived in Guatemala with but two broken; vigorous healthy chicks were eventually hatched from the imported eggs. The second shipment went to Panama; again the experiment turned out satisfactorily. The only draw-back was the high expressage rate. That set the poultrymen to pondering. Why couldn't baby chicks be carried by air express by hatching them just a few hours before the planes were due to depart. That led to trial shipments. The young birds carried well and required no feed or attention in transit.

From a small beginning the Florida trade in export baby chicks by air has grown into a regularly established business. The New Hampshire Reds, good for both meat and egg production, with Leghorns, record layers, have proved most popular in South America. It now costs about seven cents per chick to send these younglings by air express to Porto Rico; they travel in chick pullmans stored securely in the fuselage with other express. Mammoth Bronze turkey poults also carry satisfactorily to South America but due to their greater size the air express cost is about 50 per cent higher than that for baby chicks. Chick deliveries as far as 6,000 miles from Miami have been made successfully by plane; more than 1½ million chicks have already been exported to South America by air express.

The export chicks in their cardboard "pullmans" arrive at the International Airport (Miami) just prior to the departure of the southbound airliner and are hastily loaded in the amphibian.

ON THE AIR

Conducted by
JEROME J. HENRY

Seeing a Big Show Go on the Air

IF you have never seen a big network radio show go on the air and would like to know what it feels like, you may be interested in the reaction of a newspaper reporter who covered a broadcast of Phil Spitalny's girl orchestra.

Atlanta was one of a number of cities visited by the orchestra. In covering the broadcast Ernest Rogers, described the event as follows in the Atlanta Journal:

"As the minute hand of the clock edges up toward 8 it was natural to feel the tension developing. Thirty minutes before the conversation had been airy and without strain. But as the time approached when the blue chips would go down and the nation would hear the Hour of Charm in all its beauty everybody tightened up.

"With but seconds to go, Phil Spitalny reassured himself by a glance that everyone of his 30 female artists was in her place. Suddenly there was a nod from the engineering section, Mr. Spitalny's baton swept down, and—

"It was a real privilege to see a network show go on the air, but if you have thin nerves or a tendency to apoplexy,—well you'd better stay at home with your receiving set.

Red Skelton and Edna Stillwell of Avalon Time. They were in vaudeville together before going on the air. Edna has blue eyes, brown hair and a beautiful smile.

• • •

Makes London Love Cowboy Songs

COWBOY and hillbilly music may be native to America, but the English are crazy about it. Carson Robison, one of radio's popular cowboy

BE THRIFTY!

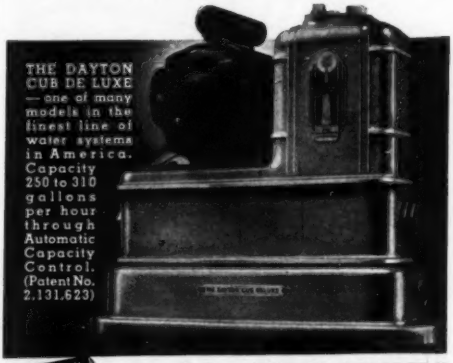
YE'LL GET MORE GALLONS O' WATER PER DOLLAR WITH

DAYTON

DE LUXE WATER SYSTEMS

There's a bit of good old Scotch thrift in most of us—or should be. And to all such there comes a thrill at the economical way DAYTON De Luxe Water Systems deliver PLENTY of water under pressure. DAYTON'S exclusive Automatic Control increases capacity from 250 gallons to 310 gallons per hour whenever increased supply is required.

These newly designed, modern units give you "PACKAGED" City Water Service, complete accessibility, long service and dependability. New EASY payment plan available. Use coupon for information and free illustrated book on DAYTON'S complete line of water systems and water softeners.



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Dept. E-5, Dayton, Ohio.

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DAYTON, OHIO

I am the Silent DURO Water System

I Make Life Easier for You!

I will pump a clean, healthful, constant supply of water for your house and barn, thus ending your daily water-carrying chores. I will be faithfully on the job in case of fire.

I am FULLY AUTOMATIC! Long-lived and completely dependable, too! I won't cause you any trouble.

Let me tell you how little I cost to own and operate. Let me send you my FREE illustrated booklet . . . "RUNNING WATER." A penny post card will bring it by return mail.

DURO AUTOMATIC WATER SYSTEM FEATURES • Self Oiling • Fully Automatic • Uses Less Current

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ESTABLISHED 1915

Water Systems—Electric Pumps—Water Softeners
Water Heaters—Water Filters

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Results Amaze Dairy Industry

MILK-MASTER

Again Perfection Engineers take the lead and bring you the New MILK-MASTER—the life-like machine in which suction is automatically adjusted for **each teat.** This amazing feature assures gentle, soothing action—faster milking, more milk and MORE PROFITS. . . . You and the MILK-MASTER can do the work of three men hand-milking. It will leave you time for other jobs or for recreation. See the MILK-MASTER at your dealer's—ask him for a demonstration—or write us for folder.

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COOK ELECTRICALLY

WITH A

Monarch

COMBINATION RANGE

A size and model for every home. See your Monarch retail outlet or write for particulars.

MALLEABLE IRON RANGE CO.

1239 LAKE STREET BEAVER DAM, WIS.

singers goes to England every year to sing for the English. He reckons that Mrs. Anthony Eden, wife of Britain's former foreign secretary has come backstage more than a dozen times to ask him to sing western ditties. She is particularly fond of the one that goes:

"Down in the cane brake
close by the mill . . "

Other persistent backstage callers have been the two sons of Sir Arthur Conan Doyle, creator of Sherlock Holmes.

According to Robison, the English love the lingo of cowboy songs. He thinks there may be another reason why they go for the music. A good many of our cowboy tunes have come from Elizabethan and Irish folk songs. So there's some kinship between our ballads and their own.

Hillbilly songs, Robison says, are usually constructed on a formula that may be divided into four parts: (1) a beginning such as "Come all ye people and listen while I tell," (2) the narration, (3) a tragic story, the grimmer the better, and (4) a moral, "Get right with your Maker before it is too late, etc.

If hillbilly music has a grim note, according to Robison it probably is because it reflects the life of the hill people. They are tight-lipped and not wide travelers. For that reason Robison thinks cowboy music has a broader scope, reflecting the daring and bravery of the plains people. The cowboy ballads have historic force. Some have sprung from English sources, others were first sung by anonymous troubadors of the plains.

• • •

A Man Got the Last Word

WOMEN do not always have the last word, at least not on Paul Wings's NBC spelling bee.

Paul put on a contest between one man and five women.

James F. Berry, a retired school teacher, won the match misspelling but one word. The word was oriflamme, meaning the pennant of St. Denis, or a flag or pennant like it. Mr. Berry spelled it "auraflam." Otherwise he had a perfect score.

Waffles: "How did you happen to swallow your false teeth?"

Syrup: "My wife, who drives our auto, found that she could shut the door by just leaving it open and then giving the car a sudden start."

THE WAX METHOD OF DRESSING POULTRY

on demonstration at the
ELECTRIFIED FARM
NEW YORK WORLD'S FAIR

VISIT THE POULTRY HOUSE AND SEE THE EQUIPMENT IN OPERATION

APOTHECARIES HALL CO.

Dept. MM. Waterbury, Conn.

QUESTIONS and ANSWERS

Power for Corn Elevator

Question: *Please send me information as to what size electric motor to get to run a corn elevator.* R. H. W., Illinois.

Answer: For an elevator not more than 28 inches wide, assuming that you are elevating at the rate of 10 bushels per minute, you will need a 3 horsepower motor. If the rate is faster or slower you would need a larger or smaller motor in proportion.

Homemade Transformer

Question: *How could I build a transformer to step down 110 v. A. C. current to 6 v. D. C.?* E. D., Texas.

Answer: It is not possible to change alternating current into direct current by the use of a transformer. There are rectifying tubes for the purpose, but they cannot be homemade.

Will Heat Affect Refrigerator

Question: *In rearranging my kitchen I should like to place my electric refrigerator about 10 inches from my 40-gallon hot water tank. Would this increase the current consumption?* Mrs. H. R. S., Virginia.

Answer: Very slightly if your water tank is electric and well insulated. If not insulated it will increase the current consumption enough to warrant installing a tank cover or a strip of insulating board between the two.

Hoisting Baled Hay

Question: *Please give me information on a simple, fast, inexpensive method of using an electric motor for pulling baled hay into the mow.* R. M., Jr., Virginia.

Answer: Use an ordinary hay hoist with slings and a 3 or 5 h.p. motor as shown on pages 17-18 of our June, 1938 issue. Or use a sloping chute with chain type elevator. One of these with 1 h.p. motor is being used by the Dairy Dept., at the Univ. of Tenn., Knoxville, very satisfactorily.

2 H.P. Motor and 6-Inch Belt for Feed Mill?

Question: *I pay a $6 minimum and don't quite use it all. Could I use a 2 h.p. motor in place of a 6 h.p. gas engine for grinding feed with an 8 in. burr mill? Would it be better to use a 3 h.p. motor? The gas engine has a 16 in. pulley and runs at 550 rpm. How large a pulley should I have on the motor with an 8 in. pulley on the mill? Pulleys must be 6 in. wide to use my 6 in. belt.* R. C. B., West Virginia.

Answer: A 3 h.p. motor would grind faster. You can grind satisfactorily with a 2 h.p. if you regulate your feed to that power. An automatic feed chute would help. With 2 h.p. slow the mill down to about 850 rpm. This would call for a 4

Westco

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★ Can be installed away from the well.
★ Have no moving parts below ground.
★ Require no plungers or sucker rods.
★ Are quiet... can't pulsate or pound.

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MILK COOLING PAYS

An Esco "NI-AG-RA" will cool your milk to below 50° in one hour or less. This means—lower bacteria count—higher quality milk—higher prices.

Only Esco "NI-AG-RA" has all these exclusive features

Constant Neck-High Water Leveler—This keeps all cans in "up-to-their-chins"—whether one can, half or full capacity is in place. This constant level is maintained automatically. Positive water agitation and complete circulation—faster cooling—lowest operating cost.

Send coupon or postcard TODAY. Get FREE Booklet and complete details on this remarkable new cooler.

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Gentlemen: I am shipping ..... cans of milk a day. Send FREE descriptive booklet on the ESCO "NI-AG-RA".

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DAZEY ELECTRIC CHURN

At the New York WORLD'S FAIR

● Be sure to put the ELECTRIFIED FARM on your "must see" list if you're going to the New York World's Fair and make a special note to get full information about the *Dazey Electric Churn* in that exhibit. It has all the features that have made Dazey Hand Churns famous for generations, made even more effective by POWER. Unbelievable savings of time and labor. Priced remarkably low. Sold wherever there are rural power lines. So, if you can't go to the Fair, see it at your local hardware store or write for particulars.

DAZEY CHURN & MFG. CO. Dept. E-184, Warne and Carter Avenues, St. Louis, Mo.

BREATHE HEALTH

Terpezone brings to any room of your home an artificial mountain air—many times intensified—which for 29 years has proven beneficial in such troubles as Sinusitis, Catarrh, Bronchitis, Anemia, etc. This pleasant, healing vapor tends to build up the deficient blood stream and it acts upon the membranes of the nose and throat in many chronic respiratory diseases.

Rent a Terpezone Generator
(with purchase option)

Let results in YOUR case decide your purchase. Operation from ordinary light socket or farm lighting plant.

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SAVE HAYING TIME AND LABOR

For use with one, two or three phase Electric Motors. Get motor and full data from your local power dealer.

HANDLE YOUR HAY FORK WITH AN
IRELAND HOIST

PAYS FOR ITSELF THE 1ST SEASON

"Unloads 3 times faster"—"Saves man and team" "Worth 3 times the money I paid"—"Certainly works well"—"Can't go wrong with an Ireland Hoist"

Quick in action with perfect control. Capacity 1200 pounds direct pull. Thousands in use.

Write for Descriptive Illustrated Folder

IRELAND MACHINE & FOUNDRY CO. NORWICH, N. Y.

in. pulley on the motor. A six inch belt wastes power. Use a 2 or 3 in. single leather or 4-ply rubber belt.

Brass Unions Leak After Use

Question: *The first time I use brass seated unions they make tight joints without trouble, but if I repair or change one I have trouble making it tight. What can I do to avoid that trouble?*
C. E. M., Vermont.

Answer: Be sure the seat of the union is clean and dry. Remove any dirt or grit and be careful to avoid paint, caulking compounds or oil on the joint. If this does not correct the difficulty the unions may be corroded from long use or chemicals in the water, and may have to be replaced.

Refrigerator Insulating Materials

Question: *Would you send me the names of some of the newer and better moisture-proof insulating materials? Would like to have insulation for a refrigerated storage.* C. S., Ohio.

Answer: One of the newest materials is "dry zero bound-batt," made by the Dry Zero Corporation, 60 East 42nd St., New York City. Another one which is being used is shredded redwood bark, and I think the trade name is "Palco" wool. Rock wool and glass wool are both being used to a considerable extent for house insulation. These products may get wet but they do not absorb moisture. Aluminum foil in sheets is a very light weight and effective insulating material

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WATER HEATING FOR THE FARM

with the LOSEE
PORTABLE ELECTRIC AUTOMATIC WATER HEATER

DESIGNED expressly for dairy farms, its first cost is low and it is amazingly economical in operation. Simply pour in cold water and it is heated electrically and kept so automatically. Compact, absolutely safe, no odors, smoke or fumes. Tested and approved by leading agricultural colleges. See your electric company or write us for bulletin.

LOSEE PRODUCTS COMPANY, HEBRON, ILLINOIS
PIONEERS OF DAIRY STERILIZING EQUIPMENT

particularly for higher temperatures. The insulating properties are due to a reflection of the heat waves.

Of course the old standby insulating material which has stood the test for years is cork board. It has structural strength in addition to insulating properties and when painted with hydrolene cement is practically moisture proof.

Electric Brooder from Coal Hover

Question: *I have a 300 chick capacity hover from a coal stove and would like to make it into an electric brooder. What type of heating element could I put in it to make a satisfactory brooder? Where could I purchase one?* J. H. K., Wisc.

Answer: We would not recommend attempting to make over a canopy from a coal stove brooder into an electric brooder by installing electric heating elements. Such canopies have no insulation and do not have the right shape to make a satisfactory electric brooder.

Tractor vs. Motor for Ear Corn Job

Question: *What does it cost you now to grind ear corn with your tractor?* Editor, E. O. F.

Answer: We have just made a test with our I.H.C. 10-in. burr grinder 12 years old and our Case C.C. tractor. Grinding ear corn just fine enough to allow no grain to pass through whole, we ground 2,000 lbs. in 20 minutes using 5 quarts of gasoline. The gasoline cost 12c per gallon or 15c for grinding 2,000 lbs. The oil used would be very small. This would be so near the cost of using a 10 h. p. motor that the convenience and safety would make the latter far more satisfactory.
C. N., Indiana.

How to Make a Sun-Lamp

Question: *Can you advise me where I can get directions for assembling a sun-lamp at home? I understand a transformer is needed in the circuit.* J. H. V., Conn.

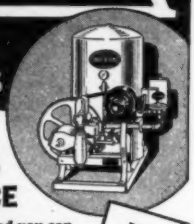
Answer: Special transformers are required which vary the current as the mercury in the lamp becomes vaporized. Bulbs and sockets may be obtained from most any electrical dealer. Transformers as repair parts might be obtained from the General Electric Supply Co. Special aluminum reflectors must be used. We doubt the advisability or economy of attempting to build one of these lamps at home. Department and other stores sometimes have special prices.

Plans for Roadside Stand

Question: *We have a truck farm on a main highway and want to build a fruit and vegetable stand with modern lighting. Where can we get plans?* Mrs. A. V. W., Ida.

Answer: Agricultural Engineering Department of your State College; Bureau of Agricultural Chemistry and Engineering, U.S.D.A., Washington, D. C. Bulletins on roadside marketing may be obtained from Univ. of Maryland, College Park, Md., Ohio Ag. Exp. Sta., Wooster, O., and Cornell Univ., Ithaca, N. Y. Since there have been many new developments in lighting in the last few years, I would recommend that you ask your power company lighting man for advice on the most effective and economical lighting.

HOOSIER
WATER SYSTEMS



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Select a HOOSIER and you can be sure of dependable water service for many years. Complete line to meet all needs. Deep well or shallow well. Powered by electricity, gasoline or windmill. Capacities from 225 to 3,000 gallons per hour. Thousands in use at lake cottages, farms, country estates and public institutions. Famous for their sturdy, quality construction and day-in, day-out dependability.

DEEP WELL OR SHALLOW WELL
AMPLE CAPACITY
NO RUSTY OR OILY WATER

Write for FREE BOOK

Your Hoosier dealer will help you select just the right equipment to meet your needs. Or write us for booklet giving valuable water supply information. It will help you to buy wisely.

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595 OAK ST., KENDALLVILLE, IND.
Makers of the New STAR Zephyr Windmill

Grind Your Own FEED-10¢ A TON Pay as You Grind

RED TORNADO HAMMER MILL
You can own this amazing feed grinder for what you are now paying to have your feed ground. Save time and money. Grind what you want when you want it—wheat, corn, oats, barley, ear corn, roughage, stalks, etc.
SELF FEEDING—REQUIRES NO ATTENTION
Does same work as big, expensive mills. Generates a "tornado" of smashing, grinding power. Works from any 110 or 220 volt outlet. Special ½ H.P. motor swings hammers at terrific speed. Uses little current. R. C. Wurzel, Mich., says: "After using 6 mos. have ground 3100 bu. oats, barley and corn—pleased with results." Selected for feed room of "Electrified Farm of Electric Utility Industry—New York World's Fair.
$5.00 DOWN—30 DAYS TRIAL. Price and terms easily met. Use mill at our risk for 30 days. SEND NO MONEY NOW. Write for details.
VIKING MFG. CO. Dept. 34 Jackson, Mich.

Buy the Best! "CLEAN-EASY" Portable MILKER

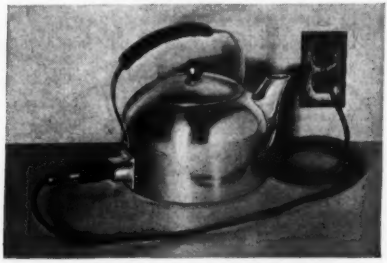
Now equipped with TRANSPARENT TEAT CUPS
—Milks 20 to 25 COWS PER HOUR
¼ H. P. ELECTRIC MOTOR... 4 AIR CUSHION BALLOON TIRES... RINSES ITSELF... EASY TO OPERATE... PAY as YOU MILK on our EASY, LONG-TERM PAYMENT PLAN! For illustrated folder and prices WRITE department 66
BEN H. ANDERSON MFG. CO., MADISON, WIS.

Reveiwed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Protected Electric Teakettle

Electric teakettles are not new. But here's one with an automatic plug-puller that is new. The kettle is of aluminum with a cool plastic handle. It holds four quarts and has a 1,250-watt heating



element. If the water in the kettle should get too low for the safety of the heating element an automatic device ejects the connection plug cutting off the current. The plug cannot again be inserted until the kettle has cooled down.

Vacuum Cleaners Have Automatic Switches

Five new vacuum cleaners have been announced by one of the old manufacturers. Three floor models ranging in price from $29.95 to $44.95 all have motor driven brushes. The unusual feature of these cleaners is an automatic mercury switch mounted in the handles. Mercury switches have no moving parts and have long life. To start the cleaner, it is only necessary to tilt the handle toward the user. The cleaner stops automatically when the handle is returned to a vertical position. One of the hand cleaners has a motor driven brush. In the illustration the "mercury button" switching element is shown in the inset. It has no moving parts.

Washer with Automatic Time Control

Departing from conventional washer design, this old standby in new dress has an automatic timing device. Put in the clothes, set the timer, and the washer will stop at the right moment to insure adequate washing without overwashing. The washer has a square tub, a six-wing oscillator and enclosed wringer. There is a place to hang the lid on the side of the machine when clothes are being put in or removed. The design fits into the modern kitchen.

Motion Picture on Sheep Shearing

A new 16 mm. motion picture showing close-ups of the methods and tricks of an expert shearer and the practical advantages of electric shearing. A sheep is sheared by the Australian method from start to finish with explanatory titles. Available without charge to responsible groups or organizations. Chicago Flexible Shaft Co., 5600 W. Roosevelt Road, Chicago, Ill.

Three New Turbine Pumps

Three larger sized turbine pumps of the type that have been used very successfully on water systems for years are announced. The capacities and motor sizes are 750 gal. per hr. with ½ h.p. motor, 950 g.p.hr., ¾ h.p., and 1,350 g.p.hr., 1 h.p. All are shallow well pumps and all are available as complete water systems with tanks of 42 to 315 gallons capacity. They are intended for heavy duty and provide capacity for sprinkling and fire protection.

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